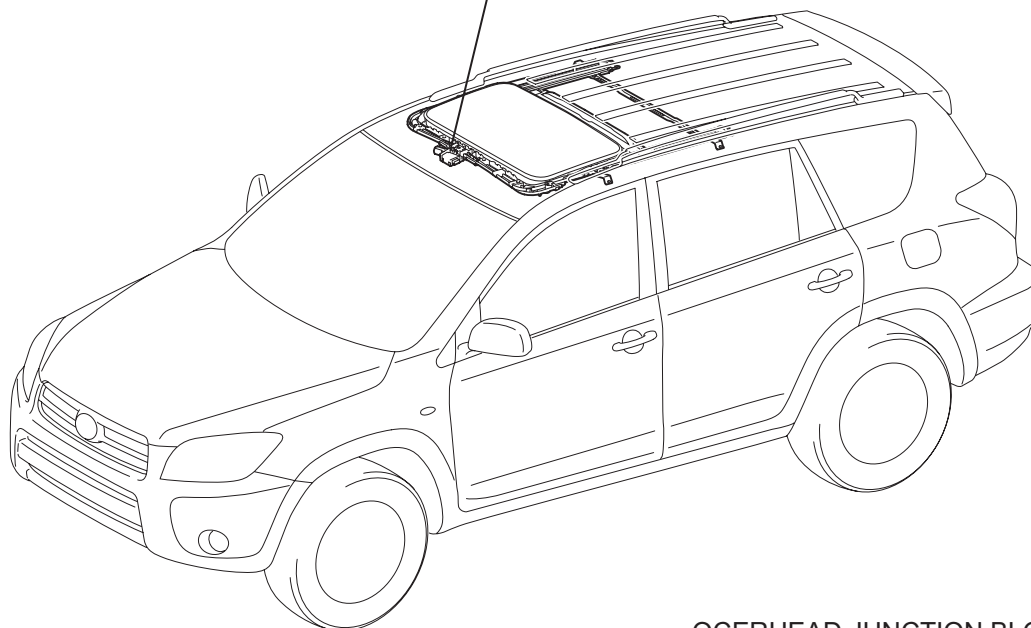


# SLIDING ROOF SYSTEM

## PARTS LOCATION

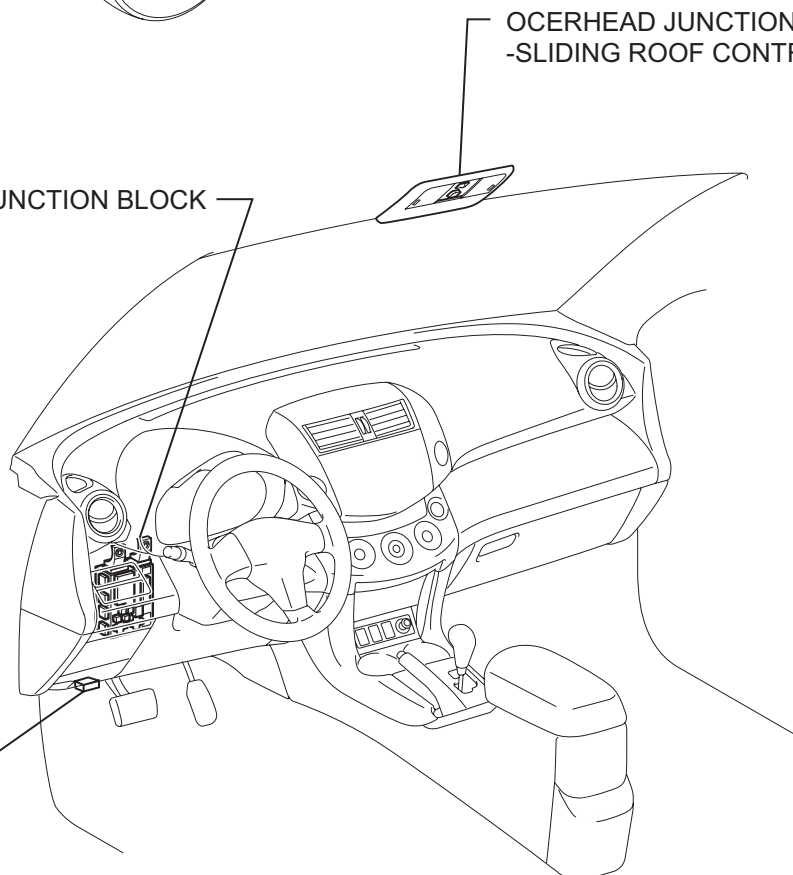
SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY  
- SLIDING ROOF ECU



OCERHEAD JUNCTION BLOCK  
-SLIDING ROOF CONTROL SWITCH

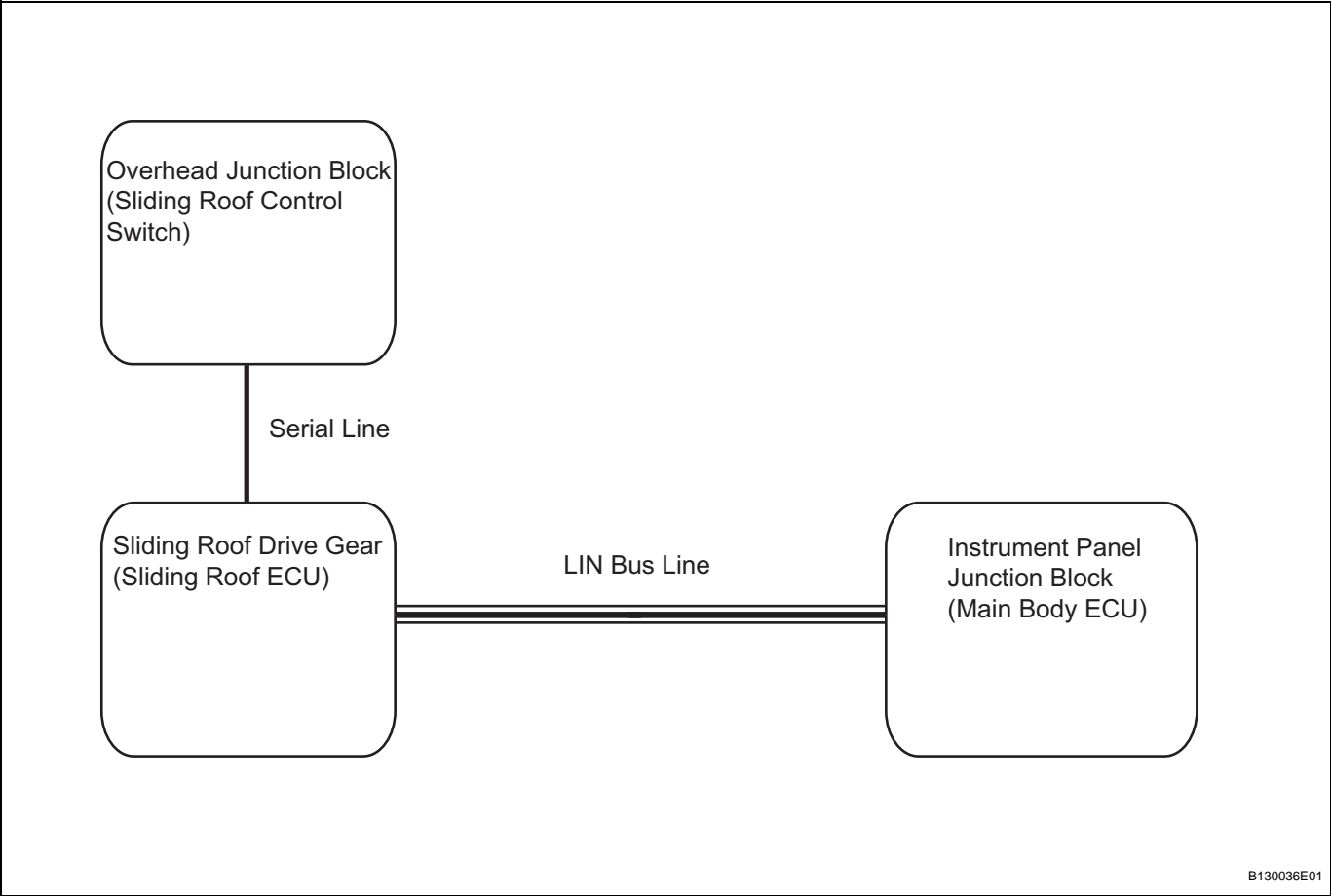
INSTRUMENT PANEL JUNCTION BLOCK  
- MAIN BODY ECU

DLC3



RF

SYSTEM DIAGRAM



Communication table

Sender	Receiver	Signal	Line
Main Body ECU	Sliding Roof ECU	Key-off operation signal	LIN

## SYSTEM DESCRIPTION

### 1. GENERAL

This system has the following functions: manual slide open and close; auto slide open and close; manual tilt up and down; auto tilt up and down; jam protection; and key off operation.

### 2. FUNCTION OF MAIN COMPONENT

Component	Outline
Sliding roof drive gear sub-assembly (Sliding roof ECU)	Sliding roof ECU controls sliding roof motor to rotate forward and backward, which tilts or slides sliding roof glass
Overhead junction block	Output of operation signals from built-in sliding roof switch to sliding roof ECU are handled by overhead junction block

### 3. SYSTEM OPERATION

The sliding roof has the following features.

Function	Outline
Manual slide open and close	This function causes sliding roof to open (or close) when SLIDE OPEN switch (or TILT UP switch) is pressed for a maximum of 0.3 seconds. Sliding roof stops as soon as switch is released.
Auto slide open and close	This function causes sliding roof to be fully opened (or closed) when SLIDE OPEN switch (or TILT UP switch) is pressed for a minimum of 0.3 seconds
Manual tilt up and down	This function causes sliding roof to tilt up (or tilt down) when TILT UP switch (or SLIDE OPEN switch) is pressed for a maximum of 0.3 seconds
Auto tilt up and down	This function enables sliding roof to tilt up (or down) when TILT UP switch (or SLIDE OPEN switch) is pressed for a minimum of 0.3 seconds.
Jam protection function	The jam protection function automatically stops sliding roof, or stops sliding roof and makes it open halfway (or fully tilts it upward) if a foreign object gets jammed in sliding roof during auto close operation (or auto tilt down operation).
Key off operation	Key off operation function makes it possible to operate sliding roof for approximately 45 seconds after ignition switch is turned off if front doors are not opened

RF

## HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use these procedures to troubleshoot the sliding roof system.
- \*: Use the intelligent tester.

### 1 VEHICLE BROUGHT TO WORKSHOP

NEXT

### 2 INSPECT BATTERY VOLTAGE

Standard voltage:

**11 to 14 V**

If the voltage is below 11 V, recharge or replace the battery before proceeding.

NEXT

### 3 INSPECT COMMUNICATION FUNCTION OF MULTIPLEX COMMUNICATION SYSTEM (CAN)\*

- (a) Using the intelligent tester, check if the Multiplex Communication System (CAN) is functioning normally.

**Result**

Result	Proceed to
CAN DTC is not output	A
CAN DTC is output	B

**B**

**Go to CAN COMMUNICATION SYSTEM**

**A**

### 4 PROBLEM SYMPTOMS TABLE

**Result**

Result	Proceed to
Fault is not listed in problem symptoms table	A
Fault is listed in problem symptoms table	B

**B**

**Go to step 6**

**A**

### 5 OVERALL ANALYSIS AND TROUBLESHOOTING

- (a) Data List / Active Test (see page [RF-7](#))  
 (b) Terminals of ECU (see page [RF-5](#))

(c) On-vehicle Inspection (see page [RF-9](#))

NEXT

6	ADJUST, REPAIR OR REPLACE
---	---------------------------

NEXT

7	CONFIRMATION TEST
---	-------------------

NEXT

END
-----

## INITIALIZATION

### 1. INITIALIZE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY

#### NOTICE:

**When replacing the sliding roof drive gear, the sliding roof drive gear requires initialization. If a reset is not executed, the following functions do not operate: auto operation and key off operation.**

- (a) Turn the ignition switch ON.
- (b) If the sliding roof is open, close it fully.
- (c) By pushing the slide open switch of the slide switch or the up switch of the tilt switch on the personal light, make the sliding roof operate as follows: Tilt up → approximately 1 second → tilt down → slide open → slide closed.
- (d) Check that the sliding roof stops at the fully closed position.
- (e) Finish the initialization.
- (f) Check that the AUTO operation works normally.

#### NOTICE:

**If the following conditions occur while operating, initialization will fail.**

- Ignition switch is turned OFF.
- Pushed sliding roof control switch is released while sliding roof is operating.
- Vehicle speed is 5 km/h (3 mph) or more.
- Communication is cut off.

#### HINT:

- If the sliding roof cannot fully close or its position has become misaligned, perform the initialization again.
- If the sliding roof TILT UP switch or SLIDE CLOSE switch is pressed and held until the roof glass has either stopped moving or started moving in the opposite direction, and then the switch is held for another 10 seconds or more, perform the initialization again.
- If the AUTO operation function and jam protection function do not operate after the drive gear has been reset, replace the sliding roof drive gear (sliding roof ECU).

## PROBLEM SYMPTOMS TABLE

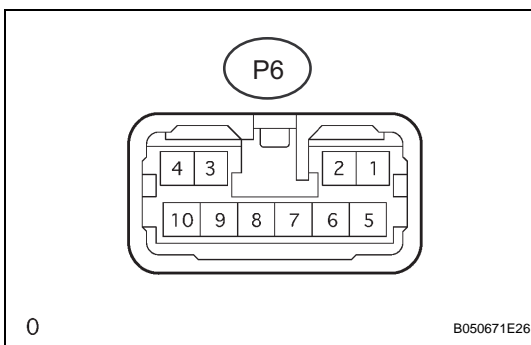
### HINT:

Use the table below to help determine the cause of the problem symptom. The potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

Inspect the fuses and relays related to this system before inspecting the suspected areas below.

### Sliding Roof System

Symptom	Suspected area	See page
Sliding function and tilt function do not operate	Sliding roof ECU power source circuit	<a href="#">RF-25</a>
Either sliding function or tilt function does not operate	Sliding roof control switch circuit	<a href="#">RF-22</a>



## TERMINALS OF ECU

### 1. CHECK SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU)

- Disconnect the P6 ECU connector.
- Measure the resistance and voltage of the wire harness side connector.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
+B (P6-1) - GND (P6-2)	L - W-B	+B power supply	Always	10 to 14 V
IG (P6-5) - GND (P6-2)	V - W-B	Power supply	Ignition switch OFF	Below 1 V
IG (P6-5) - GND (P6-2)	V - W-B	Power supply	Ignition switch ON	10 to 14 V
DWN (P6-7) - GND (P6-2)	R - W-B	Sliding roof motor open	SLIDE OPEN switch OFF	10 kΩ or higher
DWN (P6-7) - GND (P6-2)	R - W-B	Sliding roof motor open	SLIDE OPEN switch ON	Below 1 Ω
UP (P6-9) - GND (P6-2)	Y - W-B	Sliding roof motor close	TILT UP switch OFF	10 kΩ or higher
UP (P6-9) - GND (P6-2)	Y - W-B	Sliding roof motor close	TILT UP switch ON	Below 1 Ω
GND (P6-2) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

- Reconnect the P6 ECU connector.
- Measure the voltage of the connector.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
DWN (P6-7) - GND (P6-2)	R - W-B	Sliding roof motor open	Ignition switch ON, sliding roof closed, SLIDE OPEN switch OFF	Below 1 V
DWN (P6-7) - GND (P6-2)	R - W-B	Sliding roof motor open	Ignition switch ON, sliding roof closed, SLIDE OPEN switch ON	10 to 14 V
UP (P6-9) - GND (P6-2)	Y - W-B	Sliding roof motor close	Ignition switch on, sliding roof open, TILT UP switch OFF	Below 1 V
UP (P6-9) - GND (P6-2)	Y - W-B	Sliding roof motor close	Ignition switch on, sliding roof open, TILT UP switch ON	10 to 14 V

If the result is not as specified, the ECU may have a malfunction.

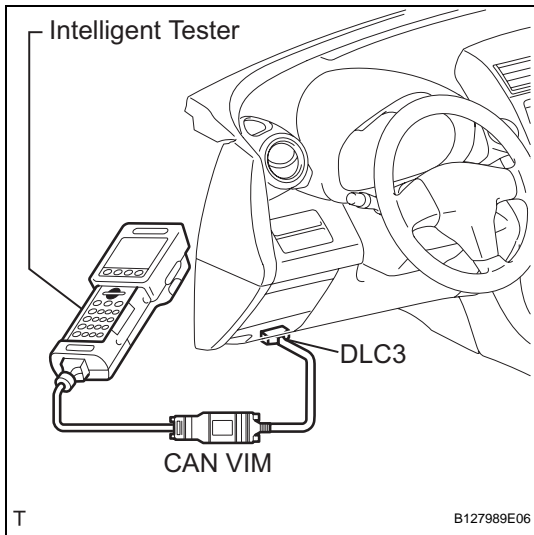
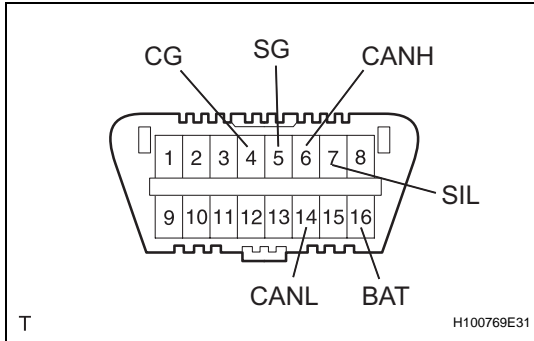
## DIAGNOSIS SYSTEM

### 1. DESCRIPTION

- (a) Sliding roof system data and Diagnostic Trouble Codes (DTCs) can be read through the vehicle's Data Link Connector 3 (DLC3). When the system seems to be malfunctioning, use the intelligent tester to check for malfunctions and perform repairs.

### 2. CHECK DLC3

The vehicle uses the ISO 15765-4 for communication protocol. The terminal arrangement of the DLC3 complies with ISO 15031-03 and matches the ISO 15765-4 format.



#### HINT:

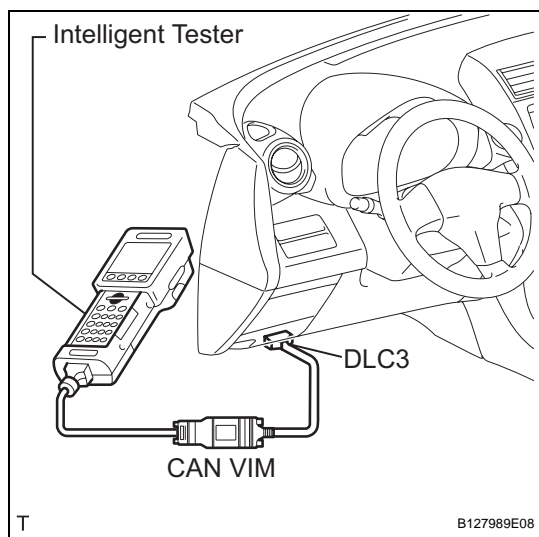
Connect the cable of the intelligent tester to the DLC3, turn the ignition switch on and attempt to use the tester. If the display indicates that a communication error has occurred, there is a problem either with the vehicle or with the tester.

- If communication is normal when the tester is connected to another vehicle, inspect the DLC3 of the original vehicle.
- If communication is still not possible when the tester is connected to another vehicle, the problem may be in the tester itself. Consult the Service Department listed in the tester's instruction manual.

Symbols (Terminal No.)	Terminal Description	Condition	Specified Condition
SIL (7) - SG (5)	Bus "+" line	During transmission	Pulse generation
CG (4) - Body ground	Chassis ground	Always	Below 1 $\Omega$
SG (5) - Body ground	Signal ground	Always	Below 1 $\Omega$
BAT (16) - Body ground	Battery positive	Always	11 to 14 V
CANH (6) - CANL (14)	HIGH-level CAN bus line	Ignition switch OFF	54 to 69 $\Omega$
CANH (6) - Body ground	HIGH-level CAN bus line	Ignition switch OFF	1 M $\Omega$ or higher
CANH (6) - CG (4)	HIGH-level CAN bus line	Ignition switch OFF	1 M $\Omega$ or higher
CANL (14) - Body ground	LOW-level CAN bus line	Ignition switch OFF	1 M $\Omega$ or higher
CANL (14) - CG (4)	LOW-level CAN bus line	Ignition switch OFF	1 M $\Omega$ or higher

If the result is not as specified, the DLC3 may have a malfunction. Repair or replace the harness and connector.





## DTC CHECK / CLEAR

### 1. CHECK DTC

- Connect the intelligent tester to the DLC3.
- Turn the ignition switch ON and turn the tester ON.
- Select the following menu item: Body / Sliding Roof / DTC.
- Check the DTC(s).

### 2. CLEAR DTC

- Connect the intelligent tester to the DLC3.
- Turn the ignition switch ON and turn the tester ON.
- Select the following menu item: Body / Sliding Roof / DTC / Clear.
- Press the YES button.
- Check that the DTCs are cleared.

## DATA LIST / ACTIVE TEST

### 1. READ DATA LIST

#### HINT:

Using the intelligent tester's Data List allows switch, sensor, actuator and other item values to be read without removing any parts. Reading the Data List early in troubleshooting is one way to save time.

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the ignition switch ON.
- (c) Read the Data List according to the display on the tester.

#### Sliding roof:

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
CLOSE SW	Slide switch close signal / ON or OFF	ON: TILT UP switch is pressed OFF: TILT UP switch is not pressed	-
OPEN SW	Slide switch open signal / ON or OFF	ON: SLIDE OPEN switch is pressed OFF: SLIDE OPEN switch is not pressed	-
IG (MPX)	Ignition switch signal (MPX signal) / ON or OFF	ON: Ignition switch is ON OFF: Ignition switch is OFF	-
IG (DIRCT SIG)	Ignition switch signal (Direct signal) / ON or OFF	ON: Ignition switch is ON OFF: Ignition switch is OFF	-
KEY OFF PERMS	Key off permission / ON or OFF	ON: Ignition switch is ON OFF: Ignition switch is OFF	-
HALL IC1 STATUS	Sliding roof operating signal / NORMAL or LOCK	NORMAL: Sliding roof motor is operating LOCK: Sliding roof motor is not operating	-
HALL IC1 PULSE	Sliding roof operating signal / LO or HI	LO: Sliding roof motor is not operating HI: Sliding roof motor is operating	-
HALL IC2 STATUS	Sliding roof operating signal / NORMAL or LOCK	NORMAL: Sliding roof motor is operating LOCK: Sliding roof motor is not operating	-
HALL IC2 PULSE	Sliding roof operating signal / LO or HI	LO: Sliding roof motor is not operating HI: Sliding roof motor is operating	-

### 2. PERFORM ACTIVE TEST

#### HINT:

Performing the intelligent tester's Active Test allows relay, VSV, actuator and other items to be operated without removing any parts. Performing the Active Test early in troubleshooting is one way to save time. The Data List can be displayed during the Active Test.

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the ignition switch ON.

- (c) Perform the Active Test according to the display on the tester.

Sliding roof ECU:

Item	Test Details	Diagnostic Note
SLIDE ROOF	Operate sliding roof CLS / UP CLS / UP: Sliding roof CLOSE or UP operation occurs OFF: Sliding roof is not operating	-
SLIDE ROOF	Operate sliding roof OPN / DWN OPN / DWN: Sliding roof OPEN or DOWN operation occurs OFF: Sliding roof is not operating	-

DIAGNOSTIC TROUBLE CODE CHART

Sliding Roof System

DTC No.	Detection Item	Trouble Area	See page
B2341	Sensor (Motor) Failure	1. Sliding Roof Drive Gear Sub-assembly (sliding roof ECU) 2. Overhead Junction Block (sliding roof control switch) 3. Wire Harness	RF-11
B2342	Switch Failure	1. Sliding Roof Drive Gear Sub-assembly (sliding roof ECU) 2. Overhead Junction Block (sliding roof control switch) 3. Wire Harness	RF-15
B2343	Position Initialization Incomplete	1. Sliding Roof Drive Gear Sub-assembly (sliding roof ECU) 2. Overhead Junction Block (sliding roof control switch) 3. Wire Harness	RF-19
B2344	Position Failure	1. Sliding Roof Drive Gear Sub-assembly (sliding roof ECU) 2. Overhead Junction Block (sliding roof control switch) 3. Wire Harness	RF-11

## ON-VEHICLE INSPECTION

### HINT:

When pressing the switch for 0.3 seconds or less, the roof glass moves but auto operation does not operate.

### 1. CHECK AUTO OPERATION

- (a) Turn the ignition switch ON.
- (b) When the roof glass is fully closed, press the SLIDE OPEN switch for 0.3 seconds or more. Check that the roof glass automatically slides until it is fully opened.
- (c) When the roof glass is fully tilted up, press the SLIDE OPEN switch for 0.3 seconds or more. Check that the roof glass automatically slides until it is fully tilted down.
- (d) When the roof glass is fully open, press the TILT UP switch for 0.3 seconds or more. Check that the roof glass automatically slides until it is fully closed.
- (e) When the roof glass is fully closed, press the TILT UP switch for 0.3 seconds or more. Check that the roof glass automatically slides until it is fully tilted up.
- (f) When the auto operation is operating, check that pressing any sliding roof control switch stops the roof glass operation.

### 2. CHECK SLIDING ROOF OPERATION AFTER IGNITION SWITCH IS TURNED OFF

- (a) Turn the ignition switch from ON to OFF, and check that the sliding roof operates. Then open the driver side door once, and check that the sliding roof does not operate.
- (b) Turn the ignition switch from ON to OFF and wait for approximately 45 seconds. Check that the sliding roof does not operate.
- (c) Operate the auto (SLIDE OPEN or TILT UP) operation. While the roof glass is in motion, turn the ignition switch from ON to OFF. Check that the auto operation continues until the roof glass opens or closes fully.

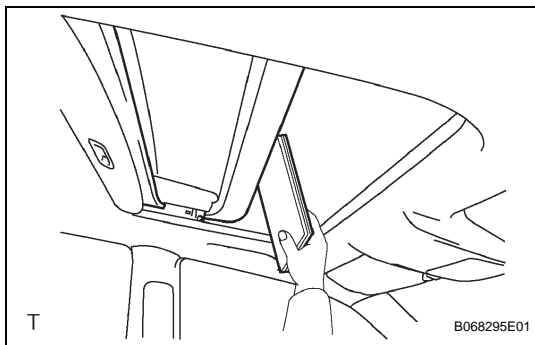
### 3. CHECK JAM PROTECTION FUNCTION

#### CAUTION:

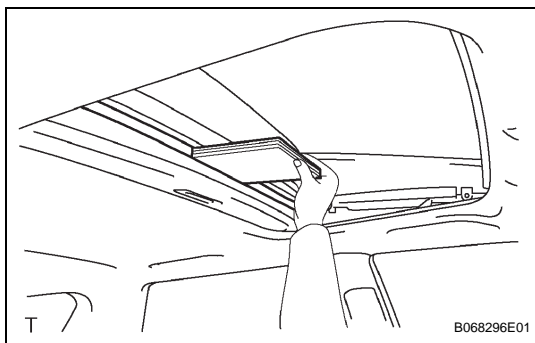
- Do not use a part of your body, for example, your hand, to check the jam protection.
- Do not allow anything to become caught in the sliding roof by accident in this procedure.
- Perform the inspection from the inside of the vehicle.

#### NOTICE:

- Do not use hard objects, such as a hammer, to avoid damage to the roof.
- If the jam protection does not operate, reset the sliding roof drive gear (motor).



- (a) When the sliding roof auto operation is operating and an object is caught between the vehicle body and glass, check that the roof glass opens a distance of 218 mm (8.58 in.) from the point of contact with the object, or opens fully if an opening distance of 218 mm (8.58 in.) is not available.



- (b) When the TILT UP / DOWN function is operating, and an object is caught between the vehicle body and the roof glass, check that the sliding roof tilts up fully.

DTC	B2341	Sensor (Motor) Failure
DTC	B2344	Position Failure

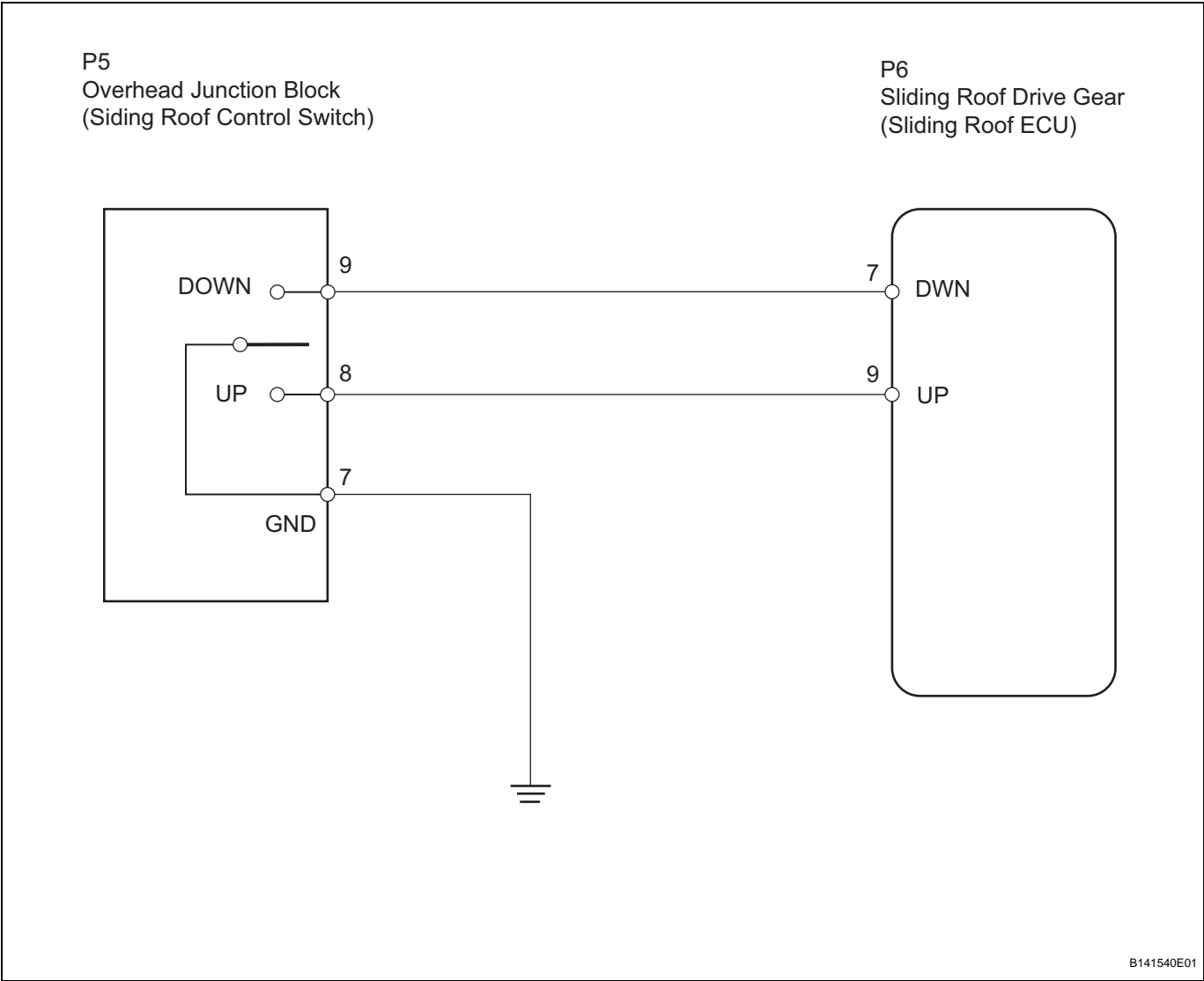
DESCRIPTION

When the sliding roof drive gear (sliding roof ECU) detects the motor's malfunction, and the sliding roof operation is stopped, DTC B2341 is output. When the sliding roof drive gear (sliding roof ECU) detects the gear's malfunction, and the sliding roof operation is stopped, DTC B2344 is output.

DTC No.	DTC Detection Condition	Trouble Area
B2341	Sensor (motor) Failure	<ul style="list-style-type: none"><li>Sliding roof drive gear sub-assembly (sliding roof ECU)</li><li>Overhead junction block (sliding roof control switch)</li><li>Wire harness</li></ul>
B2344	Position Failure	<ul style="list-style-type: none"><li>Sliding roof drive gear sub-assembly (sliding roof ECU)</li><li>Overhead junction block (sliding roof control switch)</li><li>Wire harness</li></ul>

RF

WIRING DIAGRAM



## INSPECTION PROCEDURE

**1 CHECK SLIDING ROOF FUNCTION**

- (a) Check the auto operation with the SLIDE OPEN and TILT UP switch (see page [RF-9](#)).

**OK:**

**Auto operation operates normally with SLIDE OPEN and TILT UP switch.**

**NG**

**Go to step 3**

**OK**

**RF**

**2 DELETE DTC**

- (a) Delete the DTC (see page [RF-7](#)).

**NEXT**

**END**

**3 INITIALIZE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU)**

- (a) Check that the sliding roof drive gear can be initialized (see page [RF-4](#)).

**OK:**

**Sliding roof drive gear can be initialized.**

**NG**

**Go to step 6**

**OK**

**4 CHECK SLIDING ROOF FUNCTION**

- (a) Check the auto operation with the SLIDE OPEN and TILT UP switch (see page [RF-9](#)).

**OK:**

**Auto operation operates normally with SLIDE OPEN and TILT UP switch.**

**NG**

**REPLACE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU)**

**OK**

**5 DELETE DTC**

- (a) Delete the DTC (see page [RF-7](#)).



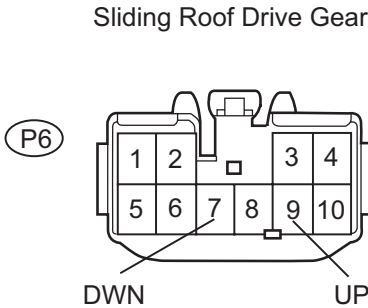
NEXT

END

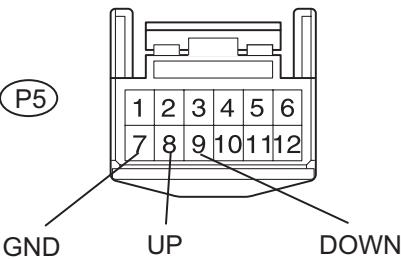
6

CHECK WIRE HARNESS (SLIDING ROOF DRIVE GEAR - OVERHEAD JUNCTION BLOCK)

Wire Harness Side



Overhead Junction Block



B130118E04

- (a) Disconnect the P6 ECU connector.
- (b) Disconnect the P5 junction block connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
P6-7 (DWN) - P5-9 (DOWN)	Below 1 Ω
P6-9 (UP) - P5-8 (UP)	Below 1 Ω
P6-7 (GND) - body ground	Below 1 Ω
P6-7 (DWN) - Body ground	10 kΩ or higher
P6-9 (UP) - body ground	10 kΩ or higher

NG

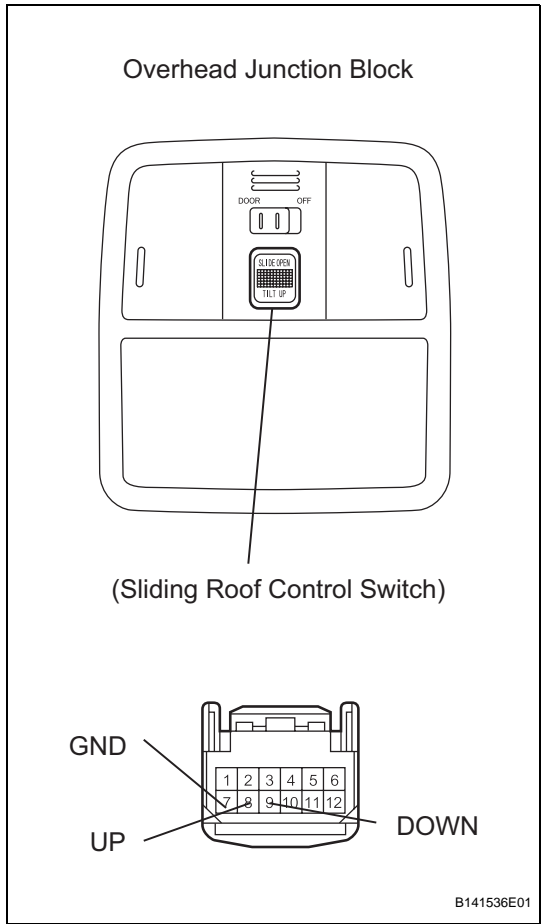
REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

RF

7

INSPECT OVERHEAD JUNCTION BLOCK (SLIDING ROOF CONTROL SWITCH)



- (a) Remove the overhead junction block.
- (b) Measure the resistance of the switch.

Standard resistance

Tester Connection	Condition	Specified Condition
8 (UP) - 7 (GND)	TILT UP switch pushed	Below 1 Ω
8 (UP) - 7 (GND)	TILT UP switch not pushed	10 kΩ or higher
9 (DOWN) - 7 (GND)	SLIDE OPEN switch pushed	Below 1 Ω
9 (DOWN) - 7 (GND)	SLIDE OPEN switch not pushed	10 kΩ or higher

NG

REPLACE OVERHEAD JUNCTION BLOCK (SLIDING ROOF CONTROL SWITCH)

OK

REPLACE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU)

**DTC****B2342****Switch Failure****DESCRIPTION**

This DTC is output when the sliding roof drive gear (sliding roof ECU) detects that the SLIDE OPEN or TILT UP switch in the overhead junction block is stuck for 30 seconds or more.

DTC No.	DTC Detection Condition	Trouble Area
B2342	Sliding roof drive gear (sliding roof ECU) detects SLIDE OPEN or TILT UP switch in overhead junction block is stuck for 30 seconds or more	<ul style="list-style-type: none"> <li>Sliding roof drive gear sub-assembly (sliding roof ECU)</li> <li>Overhead junction block (sliding roof control switch)</li> <li>Wire harness</li> </ul>

**WIRING DIAGRAM**

Refer to DTC B2341 (see page [RF-11](#)).

**INSPECTION PROCEDURE****RF****1****READ VALUE OF INTELLIGENT TESTER (SLIDE OPEN AND TILT UP SWITCH)**

- (a) Use the Data List to check if the sliding roof control switch is functioning properly.

**Sliding roof drive gear**

Item	Measurement Item / Range (Display)	Normal Condition	Diagnostic Note
Open Switch Failure (Current)	SLIDE OPEN switch condition (current) / Fail or Not Fail	Fail: SLIDE OPEN switch is stuck Not Fail: SLIDE OPEN switch is not stuck	-
Close Switch Failure (Current)	TILT UP switch condition (current) / Fail or Not Fail	Fail: TILT UP switch is stuck Not Fail: SLIDE OPEN switch is not stuck	-
Open Switch Failure (Past)	SLIDE OPEN switch condition (past) / Fail or Not Fail	Fail: SLIDE OPEN switch was stuck in past Not Fail: SLIDE OPEN switch was not stuck in past	-
Close Switch Failure (past)	TILT UP switch condition (past) / Fail or Not Fail	Fail: TILT UP switch was stuck in past Not Fail: TILT UP switch was not stuck in past	-

**OK:**

"Not Fail" appears on tester screen.

**NG****Go to step 4****OK****2****CHECK SLIDING ROOF FUNCTION**

- (a) Check the auto operation with the SLIDE OPEN and TILT UP switch (see page [RF-9](#)).

**OK:**

Auto operation operates normally with SLIDE OPEN and TILT UP switch.

NG

Go to step 7

OK

3

DELETE DTC

(a) Delete the DTC (see page [RF-7](#)).

NEXT

END

4

INSPECT OVERHEAD JUNCTION BLOCK (SLIDING ROOF CONTROL SWITCH)

- (a) Remove the overhead junction block.  
(b) Measure the resistance of the switch.

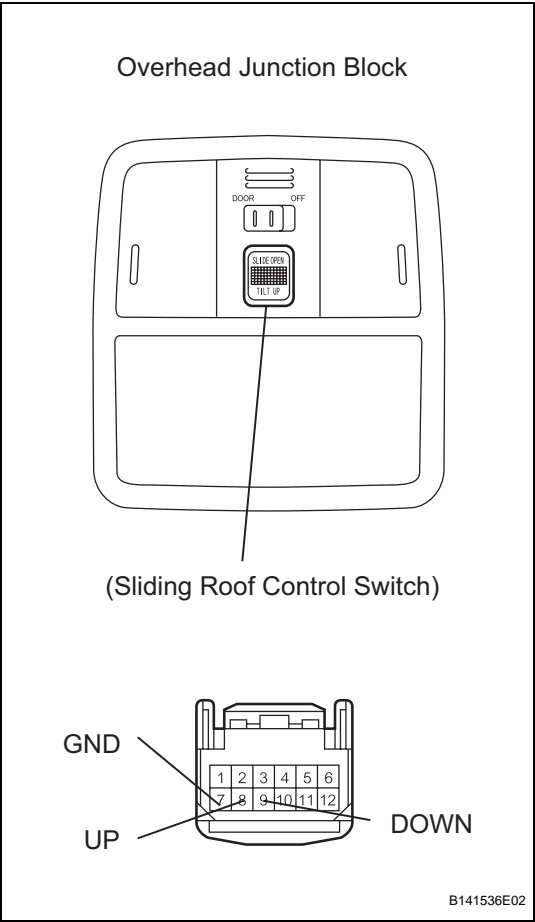
Standard resistance

Tenter Connection	Condition	Specified Condition
8 (UP) - 7 (GND)	TILT UP switch pushed	Below 1 Ω
8 (UP) - 7 (GND)	TILT UP switch not pushed	10 kΩ or higher
9 (DOWN) - 7 (GND)	SLIDE OPEN switch pushed	Below 1 Ω
9 (DOWN) - 7 (GND)	SLIDE OPEN switch not pushed	10 kΩ or higher

OK

Go to step 10

RF



NG

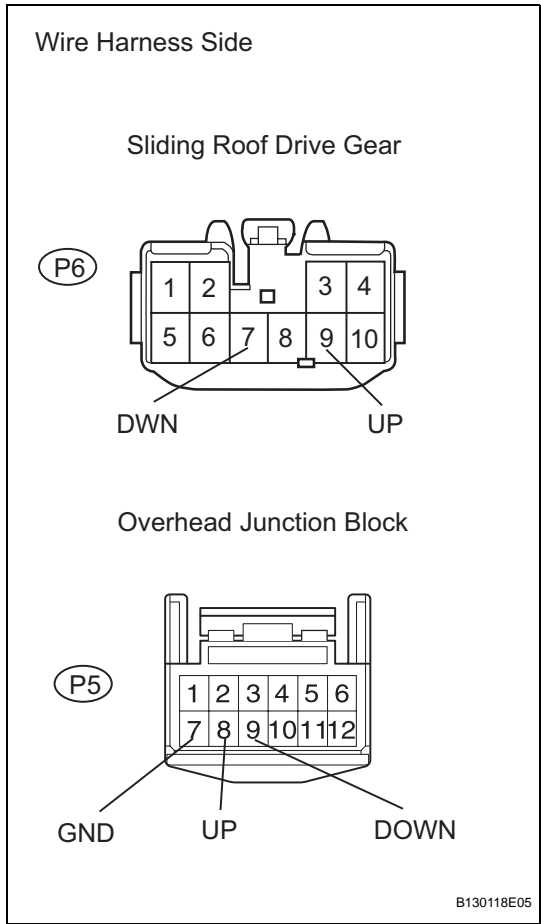
5

REPLACE OVERHEAD JUNCTION BLOCK (SLIDING ROOF CONTROL SWITCH)

- (a) Temporarily replace the overhead junction block (sliding roof control switch) with a new or normally functioning one (see page [RF-9](#)).

**NEXT****6****DELETE DTC**(a) Delete the DTC (see page [RF-7](#)).**NEXT****END****7****INITIALIZE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU)**(a) Check that the sliding roof drive gear can be initialized (see page [RF-4](#)).**OK:****Sliding roof drive gear can be initialized.****NG****Go to step 10****OK****8****CHECK SLIDING ROOF FUNCTION**(a) Check the auto operation with the SLIDE OPEN and TILT OPEN switch (see page [RF-9](#)).**OK:****Auto operation operates normally with SLIDE OPEN and TILT UP switch.****NG****REPLACE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU)****OK****9****DELETE DTC**(a) Delete the DTC (see page [RF-7](#)).**NEXT****END****RF**

10 CHECK WIRE HARNESS (SLIDING ROOF DRIVE GEAR - OVERHEAD JUNCTION BLOCK)



- (a) Disconnect the P6 ECU connector.
- (b) Disconnect the P5 junction block connector.
- (c) Measure the resistance of the wire harness side connector.

Standard resistance

Tester Connection	Specified Condition
P6-7 (DWN) - P5-9 (DOWN)	Below 1 Ω
P6-9 (UP) - P5-8 (UP)	Below 1 Ω
P5-7 (GND) - Body ground	Below 1 Ω
P5-9 (DOWN) - Body ground	10 kΩ or higher
P5-8 (UP) - Body ground	10 kΩ or higher

NG REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU)

**DTC****B2343****Position Initialization Incomplete****DESCRIPTION**

This DTC is output when the sliding roof drive gear (sliding roof ECU) has not been initialized.

DTC No.	DTC Detection Condition	Trouble Area
B2343	Sliding roof drive gear (sliding roof ECU) has not been initialized	<ul style="list-style-type: none"><li>• Sliding roof drive gear sub-assembly (sliding roof ECU)</li><li>• Overhead junction block (sliding roof control switch)</li><li>• Wire harness</li></ul>

**WIRING DIAGRAM**

Refer to DTC B2341 (see page [RF-11](#)).

**INSPECTION PROCEDURE****RF****1****INITIALIZE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU)**

- (a) Check that the sliding roof drive gear can be initialized (see page [RF-4](#)).

**OK:**

**Sliding roof drive gear can be initialized.**

**NG****Go to step 3****OK****2****CHECK SLIDING ROOF FUNCTION**

- (a) Check the auto operation with the SLIDE OPEN and TILT UP switch (see page [RF-9](#)).

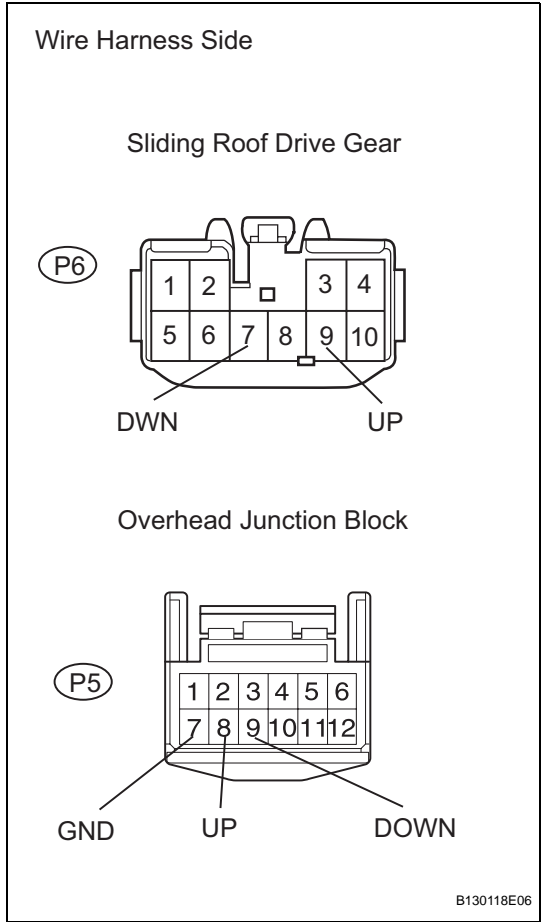
**OK:**

**Auto operation operates normally with SLIDE OPEN and TILT UP switch.**

**NG****REPLACE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU)****OK****END**

3

CHECK WIRE HARNESS (SLIDING ROOF DRIVE GEAR - OVERHEAD JUNCTION BLOCK)



- (a) Disconnect the P6 ECU connector.
- (b) Disconnect the P5 junction block connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
P6-7 (DWN) - P5-9 (DOWN)	Below 1 Ω
P6-9 (UP) - P5-8 (UP)	Below 1 Ω
P5-7 (GND) - Body ground	Below 1 Ω
P5-9 (DOWN) - Body ground	10 kΩ or higher
P5-8 (UP) - Body ground	10 kΩ or higher

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

RF



4 INSPECT OVERHEAD JUNCTION BLOCK (SLIDING ROOF CONTROL SWITCH)

- (a) Remove the overhead junction block.
- (b) Measure the resistance of the switch.

Standard resistance

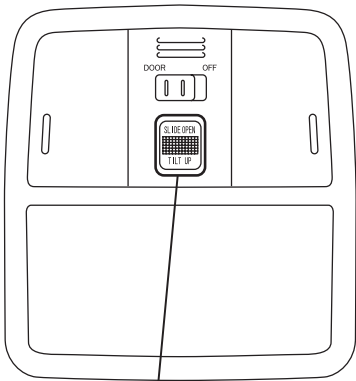
Tester Connection	Condition	Specified Condition
8 (UP) - 7 (GND)	TILT UP switch pushed	Below 1 Ω
8 (UP) - 7 (GND)	TILT UP switch not pushed	10 kΩ or higher
9 (DOWN) - 7 (GND)	SLIDE OPEN switch pushed	Below 1 Ω
9 (DOWN) - 7 (GND)	SLIDE OPEN switch not pushed	10 kΩ or higher

NG

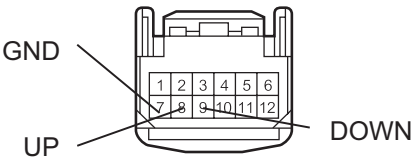
REPLACE OVERHEAD JUNCTION BLOCK (SLIDING ROOF CONTROL SWITCH)

RF

Overhead Junction Block



(Sliding Roof Control Switch)



B141536E03

OK

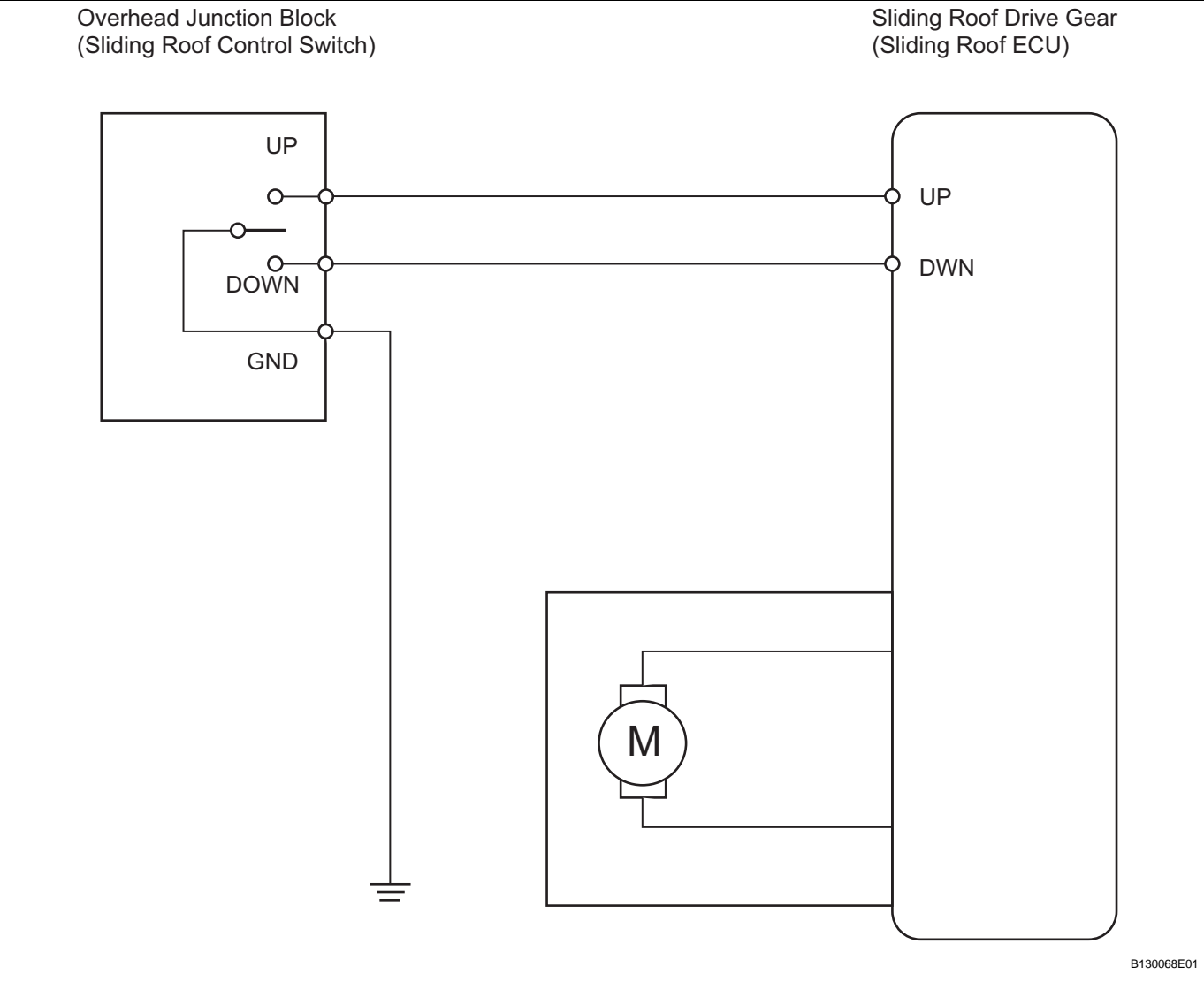
REPLACE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY (SLIDING ROOF ECU)

# Sliding Roof Control Switch Circuit

## DESCRIPTION

If either the sliding function or tilt function does not operate, there may be a malfunction in the sliding roof control switch circuit.

## WIRING DIAGRAM



## INSPECTION PROCEDURE

**1 PERFORM ACTIVE TEST BY INTELLIGENT TESTER (SLIDING ROOF OPERATION)**

- (a) Select the Active Test, use the intelligent tester to generate a control command, and then check that the sliding roof operates normally.

**Sliding roof ECU**

Item	Test Details	Diagnostic Note
SLIDE ROOF	Operate sliding roof OPN / DWN OPN / DWN: Sliding roof OPEN / DOWN operation occurs OFF: Sliding roof is not operating	-
SLIDE ROOF	Operate sliding roof CLS / UP CLS / UP: Sliding roof CLOSE / UP operation occurs OFF: Sliding roof is not operating	-

**OK:****Sliding roof operates normally.****NG****REPLACE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY****OK****2 READ VALUE OF INTELLIGENT TESTER (SLIDING ROOF CONTROL SWITCH)**

- (a) Use the Data List to check if the sliding roof switch is functioning properly.

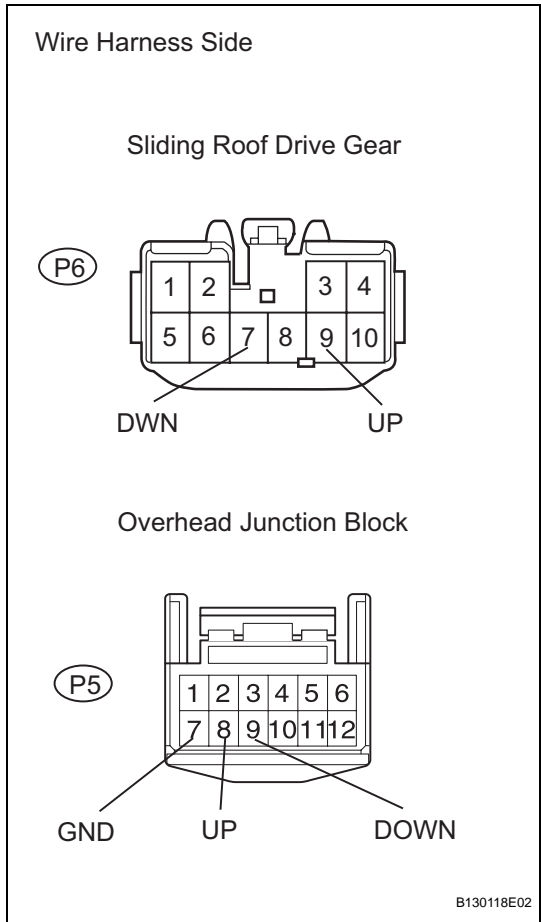
**Sliding roof ECU**

Item	Measurement Item / Range (Display)	Normal Condition	Diagnostic Note
CLOSE SW	Slide switch close signal / ON or OFF	ON: TILT UP switch is pressed OFF: TILT UP switch is not pressed	-
OPEN SW	Slide switch open signal / ON or OFF	ON: SLIDE OPEN switch is pressed OFF: SLIDE OPEN switch is not pressed	-

**OK:****When the switch is operating, the intelligent tester should display as shown in the table.****OK****REPLACE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY****NG****RF**

3

CHECK WIRE HARNESS (OVERHEAD JUNCTION BLOCK - DRIVE GEAR AND BODY GROUND)



- (a) Disconnect the P5 junction block connector.
- (b) Disconnect the P6 drive gear connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
P6-7 (DWN) - P5-9 (DOWN)	Below 1 Ω
P6-9 (UP) - P5-8 (UP)	Below 1 Ω
P5-7 (GND) - Body ground	Below 1 Ω

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

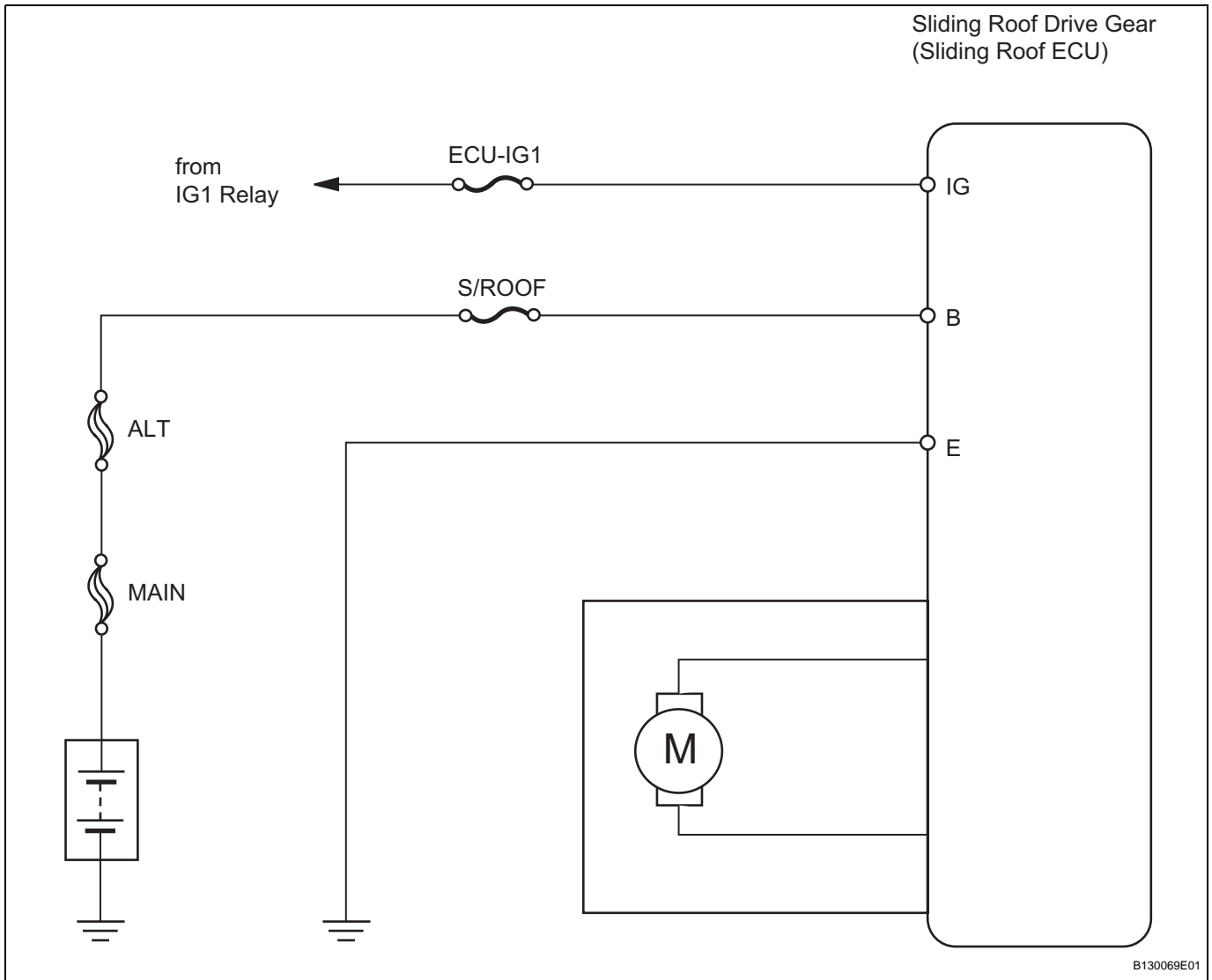
REPLACE OVERHEAD JUNCTION BLOCK

## Sliding Roof ECU Power Source Circuit

### DESCRIPTION

If the sliding function and tilt function do not operate, there may be a malfunction in the sliding roof ECU power source circuit.

### WIRING DIAGRAM



RF

### INSPECTION PROCEDURE

1

PERFORM ACTIVE TEST BY INTELLIGENT TESTER (SLIDING ROOF OPERATION)

- (a) Select the Active Test, use the intelligent tester to generate a control command, and then check that the sliding roof operates normally.

## Sliding roof ECU

Item	Test Details	Diagnostic Note
SLIDE ROOF	Operate sliding roof OPN / DWN OPN / DWN: Sliding roof OPEN / DOWN operation occurs OFF: Sliding roof is not operating	-
SLIDE ROOF	Operate sliding roof CLS / UP CLS / UP: Sliding roof CLOSE / UP operation occurs OFF: Sliding roof is not operating	-

OK:

Sliding roof operates normally.

NG

REPLACE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY

OK

RF

## 2 INSPECT FUSE (S/ROOF, ECU-IG1)

- (a) Remove the S/ROOF and ECU-IG1 fuses from the instrument panel junction block.  
 (b) Measure the resistance of the fuses.

Standard resistance:

Below 1  $\Omega$ 

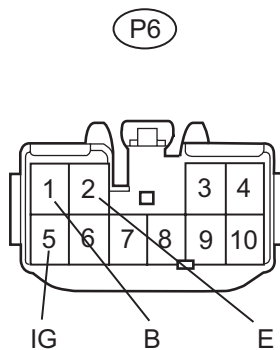
NG

REPLACE FUSE

OK

## 3 CHECK WIRE HARNESS (SLIDING ROOF DRIVE GEAR - BODY GROUND)

Wire Harness Side



B130117E02

- (a) Disconnect the P6 drive gear connector.  
 (b) Measure the voltage and resistance of the wire harness side connector.

Standard voltage

Tester Connection	Condition	Specified Condition
P6-1 (B) - Body ground	Always	10 to 14 V
P6-5 (IG) - Body ground	Ignition switch OFF	Below 1 V
P6-5 (IG) - Body ground	Ignition switch ON	10 to 14 V

Standard resistance

Tester Connection	Specified Condition
P6-2 (E) - Body ground	Below 1 $\Omega$

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY